

<b>Bharat Heavy Electricals Limited, Heavy Electrical Equipment Plant, Haridwar - 249403, Uttarakhand, INDIA.</b>		Enquiry No. & Date:			
		Due Date:			
		Supplier's Ref.:			
		Date :			
<b>Specifications of End Carriages of AC Enclosure for Sliding Stator Winding Assembly (Load Bearing Capacity: 20 Ton approx.)</b>					
<b>Note:-</b>					
<b>1. The offer and all documents enclosed with offer should be in English language only.</b>					
<b>2. The following format must be completely filled and deviations mentioned in the appropriate columns. Inadequate /incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications / requirements shall be treated as non-compliance.</b>					
<b>3. Vendor must submit complete information against clause no. 21 (Qualifying condition). The offer meeting this clause would only be processed.</b>					
<b>Name &amp; Address of the Supplier:</b>					
<b>Telephone No.:</b>					
<b>Fax No.:</b>					
<b>e-mail :</b>					
<b>Scope of Supply:</b> Design, Manufacturing, Supply and Job Proving of End Carriages (Set of 4 - 2 Drivers and two driven interconnected, on which canopy will be mounted) for Sliding Stator Winding Enclosure (Load Bearing capacity 20 Ton) complying with the following specifications:					
<b>Annexure 'A' to Indent No.: 20112679, Dated: 03.08.2011</b>					
<b>MATERIAL CODE NO.: ZWI070102015</b>					
<b>S. No.</b>	<b>Description - BHEL's Requirement</b>	<b>Specified</b>	<b>Offered</b>	<b>Deviations</b>	<b>Remarks</b>
1.0.0	<b>Application:</b>				
1.0.1	The End Carriages are meant for the purpose to move the Sliding AC Enclosure of Stator Winding (Size 7Mx7Mx14M) which will be fabricated over the End Carriages.	Vendor to note			
2.0.0	<b>Scope of Supply:</b>				
2.0.1	Design, Manufacturing, Supply and Job Proving of End Carriages (set of 4 - 2 Drivers and two driven interconnected, on which canopy will be mounted) for Sliding Stator Winding Enclosure (Load Bearing capacity 20 Ton)	Vendor to Comply			
3.0.0	<b>Quantity Required:</b>				
4.0.0	<b>End Carriage:</b> Set of 4 Nos. (2 Driver and 2 driven):	2 Sets			
5.0.0	<b>Size of End Carriage (Approx.):</b> 2 M long x 0.5 M wide (approx.)	Vendor to Comply			
6.0.0	<b>Wheel Base of End Carriage:</b> 6.5 Meter (approx.)	Vendor to Comply			
7.0.0	<b>LT Wheel Rail Track Size:</b> R-52	Vendor to Comply			
8.0.0	<b>Speed:</b> 1-2 Meter / Min. Approx.				
9.0.0	<b>Wheels:</b> Wheels shall be forged and made of C55 Mn75 Carbon steel, Hardened to BHN 300-350.	Vendor to Comply			
9.0.1	<b>Wheel Size:</b> 300 MM approx. shall be matched with the above rails and should not be projected top of the End carriages.	Vendor to Comply			
9.0.2	<b>Wheel Assembly:</b> The Wheel Assembly of Long Travel (LT) shall be of Live Axle System with L-Type Bearings only.	Vendor to Comply			

10.0.0	<b>End Clearance:</b> End clearance to be fixed to suit the area which enclosure is to be installed.	Vendor to visit the site & take measurments			
11.0.0	<b>Long Travel Motion:</b> LT Motion shall be twin drive type.	Vendor to Comply			
12.0.0	<b>Structrual Fabrication (Constructional Details):</b>				
12.0.1	<b>End Carriage:</b> Fabricated from rolled steel sections / plates as per IS:2062. End carriage shall be manufactured / fabricated as per EOT Crane IS: 807 & IS: 3177 (latest version)	Vendor to Comply			
12.0.2	<b>Raw Material:</b> Only tested quality steel Fe 410 WB as per IS-2062, IS:1964 & IS:808 and certified for quality by reputed inspection authorities, shall be used.	Vendor to Comply and produce certificates.			
12.0.3	<b>Welded Joint Testing:</b> All Butt Welded Joints (both compression/ tension and flanges / web joints) shall be subjected to 100% X-Ray Testing and X-Ray Films to be produced for BHEL evaluation and form part of the documentation.	Vendor to Comply			
12.0.4	<b>Brakes:</b>	Vendor to Submit details & type			
12.0.5	<b>Gear Boxes:</b> Shall be of Redicon, Elecon, Boingfili or equvalant make or prefered make to be approved by us during approval of drawing.	Vendor to comply & Submit			
12.0.6	<b>Lubrication:</b> Suitable lubrication system shall be provided for gear box / all rotating parts wherever applicable.	Vendor to Comply			
12.0.7	<b>Type of Coupling:</b> Couplings should be flexible geared Barrel type. No pin / bush / rubber type coupling to be used	Vendor to Comply			
12.0.8	<b>Machining Operation:</b> All mechanical mating surfaces and wheel seating areas are to be machined to the required finish and protected.	Vendor to Comply			
12.0.9	<b>Buffers (End Stoppers):</b> Buffers of adequate size shall be provided.	Vendor to provide			
13.0.0	<b>Electricals:</b>				
13.0.1	<b>Control / operation:</b> 2 set of push button for forward & reverse motion shall be provided. 2 nos. red revolving flesher light with siren / alarm to be provided during operation.	Vendor to note			
13.0.2	Suitable DOL Starter of reputed make shall be supplied by supplier. BHEL shall provide power supply upto starter only.	Vendor to confirm			
13.0.3	<b>Input Power Supply:</b> Shall be $415 \pm 10\%$ Volts, $50 \pm 3\%$ Hz, 3 Phase, AC.	Vendor to note			
13.0.4	<b>Control Voltage:</b> Shall be 110V AC	Vendor to note			
13.0.5	<b>Control Panels &amp; Protection:</b> All Panels, Limit-Switches and Motors shall have provided and protected with IP 54 protection.	Vendor to Comply			
13.0.6	<b>Motor Details:</b> Squirrel Cage Induction Crane duty motors, Totally enclosed, fan cooled, Insulation Class-F & confirming to relevant latest IS:325, and IS-123, S4 duty, 150 starts per hour and 40% CDF.	Vendor to Comply & submit Kw rating of motors which may be fixed after discussion.			
13.0.7	Long Travel (LT) with soft starter / Hydraulic Coupling / Torque converter				

14.0.0	<b>Painting Instructions:</b>				
14.0.1	<b>Painting:</b> One coat of Red Oxide Primer with 25 micron DFT (Dry Film Thickness) and 48 hours of compulsory curing after painting.	Vendor to Comply			
14.0.2	The End Carriages should be thoroughly cleaned and final painting with two coats of Enamel Paint (Colour – Golden Yellow) each with a DFT of 25 micron and intermittent curing of 16 hours. Final touching will be done after erection & commissioning at site if required.				
15.0.0	<b>Mandatory Spares:</b> One No. complete set of Gearbox with motor assembled	Vendor to Comply			
16.0.0	<b>Makes of Bought Out tems:</b> (Shall be as per the list given below)				
16.0.1	<b>Electric Motors:</b> GE / Bharat Bijlee / Siemens / KEC / ABB / Crompton / Alstom / Marathan	Vendor to Comply			
16.0.2	<b>DCEM Brake Unit:</b> BCH / EPC	Vendor to Comply			
16.0.3	<b>Thruster Brake Unit:</b> Electromag / Speed-O-Control / Omega	Vendor to Comply			
16.0.4	<b>Contactors:</b> Siemens / L&T / GE / BCH	Vendor to Comply			
16.0.5	<b>Over Load Relay:</b> Siemens / L&T / GE / BCH	Vendor to Comply			
16.0.6	<b>HRC Fuses:</b> Siemens / L&T / GE	Vendor to Comply			
16.0.7	<b>Switch fuse unit:</b> Siemens / L & T / GE	Vendor to Comply			
16.0.8	<b>Timer:</b> BCH / Siemens / L & T / GE	Vendor to Comply			
16.0.9	<b>MCB / MCCB:</b> Siemens / L & T / GE	Vendor to Comply			
16.0.10	<b>Push Buttons:</b> Siemens / L & T / BCH	Vendor to Comply			
16.0.11	<b>Couplings:</b> WMI / Fenner / ALFEX	Vendor to Comply			
16.0.12	<b>Bearings:</b> SKF / FAG / NTN / INA only	Vendor to Comply			
16.0.13	<b>Control Panel:</b> Reputed make approved by us.	Vendor to Comply			
17.0.0	<b>Documents / Details for submission:</b> The following documents / details shall be submitted to BHEL for reference / checking within 30 days from the date PO placement, prior to taking up the manufacture of the End Carriage.	Vendor to Comply			
17.0.1	<b>Drawings / Documents:</b>				
17.0.2	GA Drawing of the End Carriage (for approval)	Vendor to submit			
17.0.3	Sub-Assembly and part Drawing for Wheels, coupling, shafts and Gear Box. etc.	Vendor to submit			
17.0.4	<b>Inspection:</b> Inspections shall be strictly adhered to, prior to dispatch from the Supplier's Works, witness by BHEL. Final inspection shall be carried out.	Vendor to Comply			
17.0.5	Verification of Test Certificate for Raw Materials used for Girders, End-Carriages, Hoist, Gear Box Casings etc	Vendor to Comply			
17.0.6	Verification of X-Ray Report of Butt-Joints coming in the End Carriage and Random Testing on the Welds, by physical examination.	Vendor to Comply			
17.0.7	Inspection of End – Carriages with Wheel Assembly and Total Alignment.	Vendor to Comply			
17.0.8	Checking of Wheel Alignment and Free running of the all the Mechanisms.	Vendor to Comply			

18.0.0	<b>O&amp;M Manuals:</b> 3 Sets of Erection, Operation & Maintenance Manual containing the following technical drawings & details shall be submitted. All copies shall be hard bound in high quality leather folders, encased in decent individual boxes.	Vendor to Comply			
18.0.1	<b>Drawings &amp; Details:</b>				
18.0.2	GA Drawing	Vendor to Comply			
18.0.3	Wheel Assembly Drawings	Vendor to Comply			
18.0.4	Gear Box Assembly, Sub assembly Drawings	Vendor to Comply			
18.0.5	Sectional drawings of gear boxes, Gears with no. of teeth, module, helix angle, center distance, size & no. of bearings, Drive shafts, wheels, pulleys drums & seals etc. Supplier shall supply the drawings of item manufactured by them without additional charges.	Vendor to Comply			
18.0.6	Coupling Drawing and Details.	Vendor to Comply			
18.0.7	Complete detail of BOI including Technical specifications & catalogue shall be part of O&M manual. List of suppliers of BOI with mailing address including phone no. should also be submitted.	Vendor to Comply			
18.0.8	Warranty / Guarantee Card for all Bought-Out-Items.	Vendor to Comply			
19.0.0	<b>Performane Guarantee:</b>				
19.0.1	The Performance of the End Carriages and / or the Components / Sub-Assemblies / Bought out Items shall be guaranteed for a minimum period of 24 months from the date of acceptance of the crane at BHEL Works.	Vendor to Comply			
20.0.0	<b>Qualifying Conditions :</b>				
20.0.1	Only those vendors who have supplied and commissioned at least one EOT Crane min. cap. 10T for similar applications or more in the past ten years (on the date of opening of Tender) and referred EOT Crane is presently working satisfactorily for more than one year (on the date of opening of Tender) after commissioning, should quote. The following information should be submitted by the vendor about the companies where referred Crane (s) have been supplied. This is required from all the vendors for qualification of their offer.	Vendor to accept and confirm			
20.0.2	Name of the customer / company where similar EOT Crane is installed.	Vendor to inform			
20.0.3	Complete postal address of the customer.	Vendor to inform			
20.0.4	Month & Year of commissioning.	Vendor to inform			
20.0.5	Parameters of EOT Crane (s) supplied.	Vendor to inform			
20.0.6	Name and designation of the contact person of the customer.	Vendor to inform			
20.0.7	Phone, FAX no. and e-mail address of the contact person of the customer.	Vendor to inform			
20.0.8	Performance certificate from the customers regarding satisfactory performance of EOT Crane supplied to them (Original Certificate or Through E-mail directly from the customer). The original performance certificate may be returned after verification by BHEL, if required.	Vendor to submit			
20.0.9	BHEL reserves the right to verify information submitted by vendor. In case the information is found to be false/incorrect, the offer shall be rejected.	Vendor to accept & confirm			

21.0.0	<b>Special Instructions:</b>				
21.0.1	All the components should be in metric sizes only.	Vendor to confirm			
21.0.2	Any component / part damaged during erection and commissioning or job proving to be replaced by supplier free of cost.	Vendor to confirm			
21.0.3	Technical offer must have 3 view GA drawing with complete details of parts / components, clearances, Wheel loads, Wheel base, Weight of each End Carriage, Motor rating, Frame size, Brake details. Thruster rating, Gearbox details and BOI etc.	Vendor to submit			
21.0.4	TC / GC of BOI to be submitted by the supplier.	Vendor to confirm			
21.0.5	Any other information required shall be provided during discussions / site visit by vendor.	Vendor to confirm			
21.0.6	The successful Vendor is required to measure all necessary dimensions i.e. Span and rail size etc, at site before starting of the End carriage design / manufacturing.	Vendor to confirm			
(BM PURTY)		(AMIT KUMAR)		(PRAVEEN KUMAR)	
AGM (EMT)		Dy. MANAGER (EM-BLOCK-I)		Dy. MANAGER (WEX-FE/CMWS)	